

In re Appln. of Gridley et al.
Application No. 09/491,661

AMENDMENTS

IN THE CLAIMS

Please amend claims 14, 19, 20, 22, and 24-29; cancel, without prejudice, claim 31; and add new claim 34, as indicated below in the listing of claims.

Listing of Claims

Claims 1-13 (Canceled).

14. (Currently Thrice Amended) A method of cutting a length of tire tread for a retread tire having a tire casing, the tire casing have a layer of cushion gum applied thereto, the method comprising:

measuring a circumference of a the tire casing wherein a and cushion gum may be present;

~~automatically communicating, electronically, the circumference of the tire casing to a tire tread dispenser;~~

automatically dispensing along an elongated track a length of tire tread via the tread dispenser, the length of tread based on the measured circumference of the tire casing, the length of tread having a first end and a periodically repeating tread design;

adjusting said tire tread ~~with a tire drive~~ relative to a tread cutter so that the tire tread design ~~on each end matches~~ at the point where the tread may be cut matches the tread design at the first end; and

cutting the tire tread with the tread cutter to define a second end of the tire tread, the first end and the second end defining a section of tire tread, the first end matching the second end so that said tread design will appear substantially continuous across a seam generated by each end of said tread once applied to the tire casing;

placing the entire section of tire tread on the track; and

conveying the section of tread along the track to the tire casing by propelling the first end of the tire tread, the section of tire tread being conveyed to the casing without subjecting the section of tire tread to any substantial bending.

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2 ~~15.~~ (Original) The method of claim ~~14~~, further comprising:
dispensing tire tread until a first end of the tire tread abuts a stop.

3 ~~16.~~ (Original) The method of claim ~~15~~, further comprising:
clamping the tire tread adjacent the first end.

4 ~~17.~~ (Original) The method of claim ~~16~~, further comprising:
retracting the stop.

5 ~~18.~~ (Original) The method of claim ~~17~~, further comprising:
clamping the tire tread adjacent a second end.

6 ~~19.~~ (Currently Amended) The method of claim ~~14~~, further comprising:
~~cutting the tire tread to an automatically determined length wherein the adjusting~~
step is performed automatically.

7 ~~20.~~ (Currently Amended) The method of claim ~~14~~, further comprising:
~~cutting the tire tread to an operator determined length wherein the adjusting~~
step is performed manually.

[Claim 21 (Canceled).

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d ⁹
22. (Currently Twice Amended) A tire tread cutting apparatus for cutting a length of tire tread, the length of tire tread having a first end ~~and a second end~~ and a periodically repeating tread pattern, to be affixed to a tire casing having a cushion gum, comprising:

a measuring device ~~adapted to measure at least one of the circumference of the tire casing and for measuring~~ the circumference of the tire casing plus the cushion gum and communicating the measured circumference;

a control unit operably connected to the measuring device to receive the communicated measured circumference therefrom;

a tread dispenser connected to the control unit to ~~adapted to~~ automatically dispense a length of tire tread based on the circumference of ~~at least one of the tire casing and the tire casing plus the cushion gum as measured by the measuring device,~~ the tread dispenser including a first clamp, the first clamp for clamping the length of tire tread adjacent the first end, the first clamp being driven to propel the first end of the length of tire tread; and

an elongated track arranged to deliver the length of tire tread to the casing, the track defining a path of travel for the length of tread, the path being without abrupt changes therein;

a tread cutter for cutting the tread to define ~~the length~~ a section of tread;

wherein the tread dispenser includes a an adjustable tread drive, the tread drive adjustable ~~adapted to allow such that~~ the tire tread ~~to be adjusted~~ is movable relative to the tread cutter at the point where the tire tread may be cut to define a second end of the tire tread to define the section of tread between the first and second ends, to permit the length of tread to be determined the tread cutter is selectively operable to define the second end of the section of tire tread such that the ends of the tire tread come together after the tread has been applied to the tire casing and the tread pattern at the second end substantially matches the tread design at the first end, and the track is elongated such that it can receive the entire section of tread.

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23. (Previously Amended) The apparatus of claim ⁹22 wherein the tread dispenser includes a plurality of tread rollers for supporting a roll of tire tread, the length of tire tread being dispensed from the roll.

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11 9
24. (Currently Amended) The apparatus of claim 22 wherein the tread dispenser drive includes a plurality of drive rollers ~~for moving the length of tire tread.~~

12 10
25. (Currently Amended) The apparatus of claim 23 wherein the tread dispenser drive includes a plurality of drive rollers for deploying the length of tread by simultaneously pushing and pulling the tread.

13 10
26. (Currently Twice Amended) The apparatus of claim 23 wherein the tread dispenser drive includes a plurality of drive rollers, the drive rollers disposed between the roll of tire tread and the tread cutter, ~~the drive rollers adapted to deploy the tire tread from the roll to the tread cutter.~~

14 9
27. (Currently Amended) The apparatus of claim 22 further comprising:
~~a curved track for guiding the length of tire tread therealong wherein the track is curved.~~

15 9
28. (Currently Amended) The apparatus of claim 22 wherein the tread dispenser further includes ~~a first clamp for clamping the length of tire tread adjacent the first end, and a~~ second clamp for clamping the length of tire tread adjacent the second end.

16 14
29. (Currently Amended) The apparatus of claim 27 wherein the tread dispenser further includes ~~a first clamp for clamping the length of tire tread adjacent the first end, and a~~ second clamp for clamping the length of tire tread adjacent the second end.

17 16
30. (Previously Amended) The apparatus of claim 29 wherein the first clamp includes a first clamp encoder, and the second clamp includes a second clamp encoder, the first and second clamp encoders adapted to track the location of the first and second clamps, respectively, along the track.

Claim 31 (Canceled).

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~~32.~~

(Previously Amended) The apparatus of claim ¹⁶~~29~~ further comprising:
a retractable stop adapted to provide a known location of the first end relative to
the first clamp.

¹⁹
~~33.~~

(Previously Amended) The apparatus of claim ¹⁶~~29~~ wherein the tread cutter is
disposed a known distance from the second clamp.

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~~34.~~

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(New) The method of claim ⁵~~18~~ wherein the tire tread is clamped adjacent the
first end with a first clamp, and the tire tread is clamped adjacent the second end with a
second clamp, the method further comprising:
monitoring the location of the clamps along the track.